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Whitman

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(54) **FOLDING PLAYPEN AND DUAL SLEEPER**

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A47D 7/00 (2006.01)
A47D 11/00 (2006.01)

(52) **U.S. Cl.**
CPC **A47D 13/063** (2013.01); **A47D 7/002** (2013.01); **A47D 13/061** (2013.01); **A47D 11/007** (2013.01); **A47D 13/06** (2013.01); **A47D 13/068** (2013.01)

(58) **Field of Classification Search**
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USPC 5/93.1, 99.1, 98.1
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

3,485,287 A * 12/1969 Milbourne, Sr. 160/235
4,070,716 A 1/1978 Satt et al.
4,376,318 A 3/1983 Cirillo

4,538,309 A 9/1985 Gunter
5,381,570 A 1/1995 Cheng
5,581,827 A 12/1996 Fong et al.
5,615,427 A 4/1997 Huang
5,727,265 A 3/1998 Ziegler et al.
5,845,349 A 12/1998 Tharalson et al.
6,148,456 A 11/2000 Tharalson et al.
6,349,434 B1 * 2/2002 Zhuang 5/99.1
6,901,613 B1 6/2005 Hsia
7,752,693 B2 7/2010 Espenshade
2006/0218725 A1 * 10/2006 Carpenter et al. 5/93.1
2006/0236454 A1 * 10/2006 Chen 5/93.1

FOREIGN PATENT DOCUMENTS

EP 0295761 B1 * 9/1991

* cited by examiner

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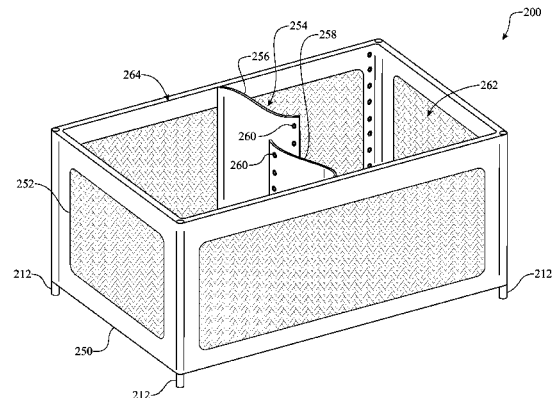
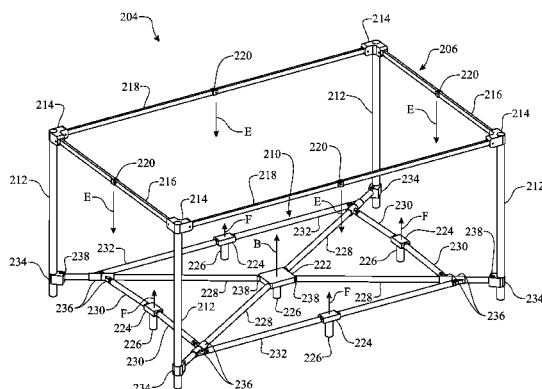
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(57) **ABSTRACT**

A folding playpen has a frame assembly including a plurality of parallel uprights arranged in a geometric configuration and a plurality of upper rails pivotally affixed to and extending between a top portion of adjacent ones of the uprights. A co-planar grid of braces extends between said the uprights and includes a central support block at a center of geometrically configured uprights. The braces being pivotally attached to the central support block and to a respective one of the uprights. A flexible covering extends about a periphery of the frame assembly and a pad is supported by the co-planar grid. The frame assembly is selectively collapsible from a usable configuration to a storage configuration by vertically translating the central support block from a lower position to a position proximate to a top of the uprights.

15 Claims, 18 Drawing Sheets



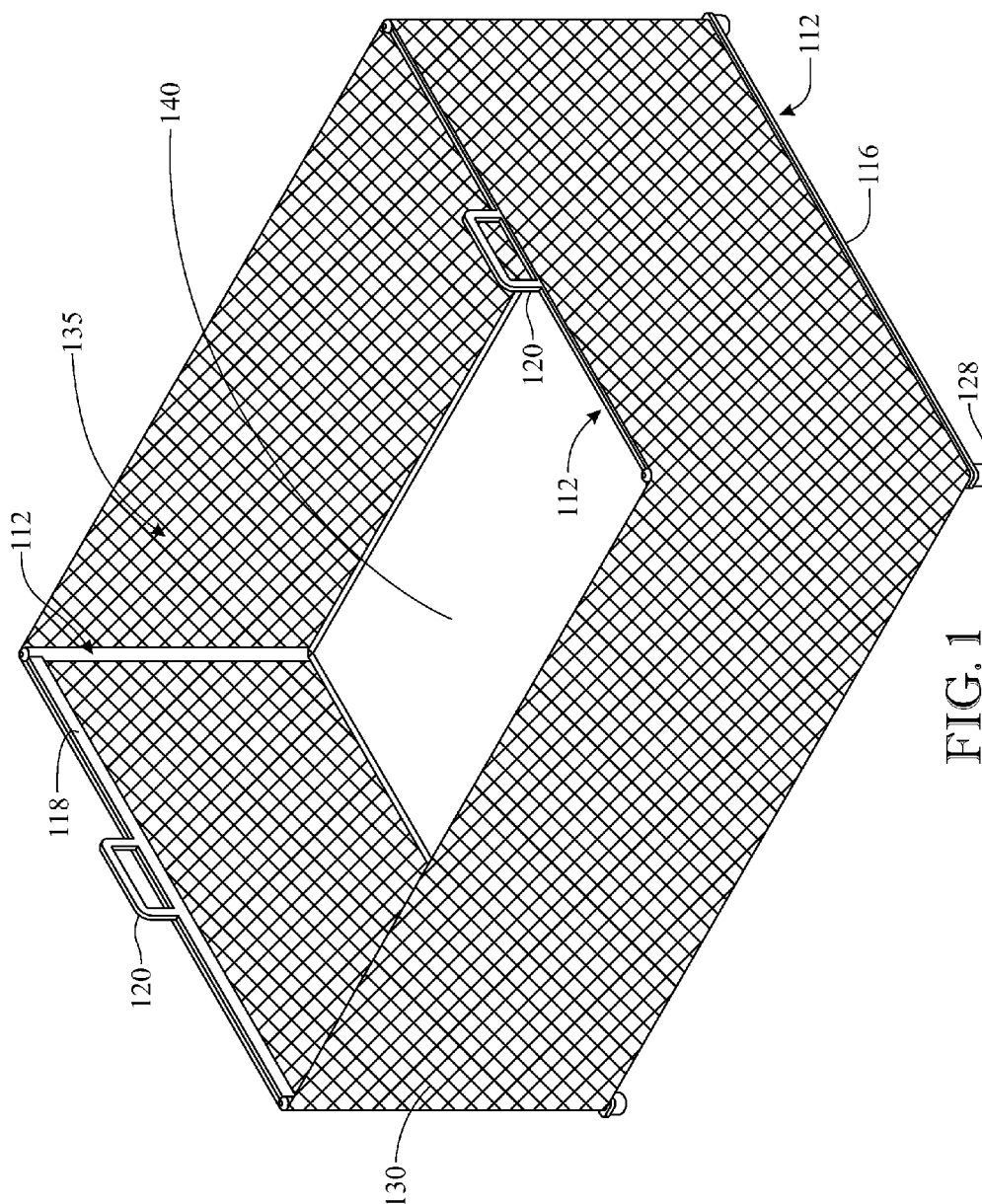


FIG. 1

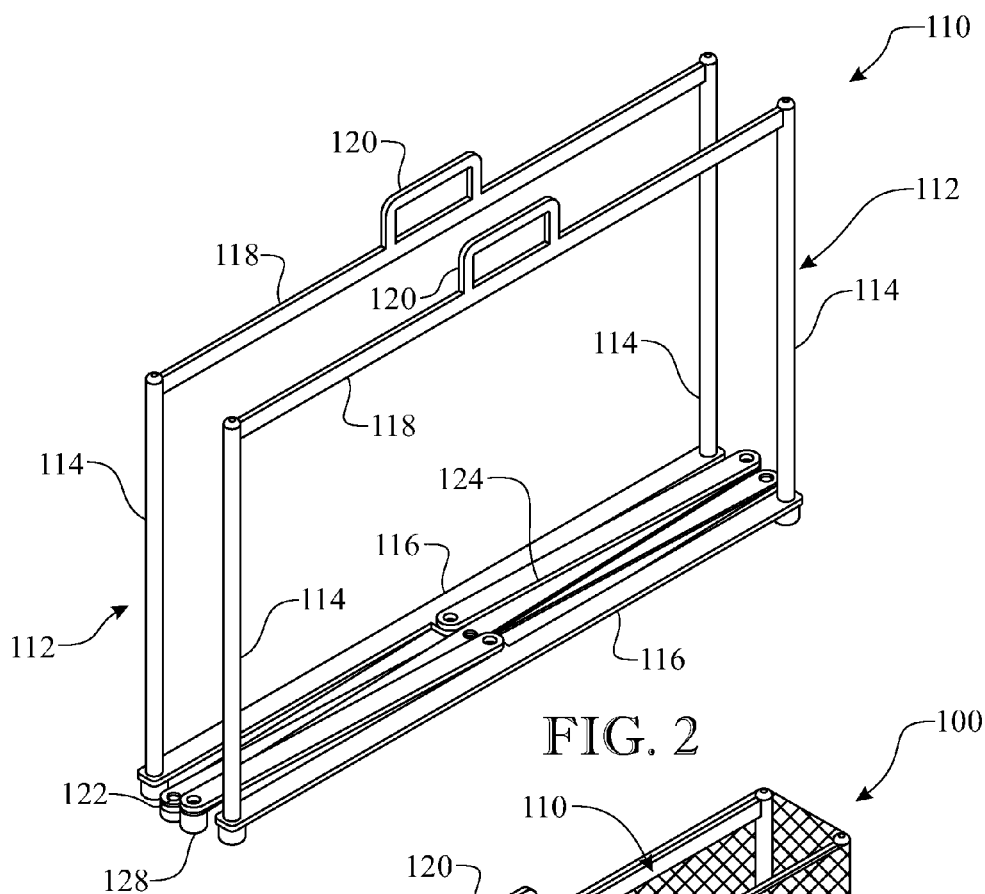


FIG. 2

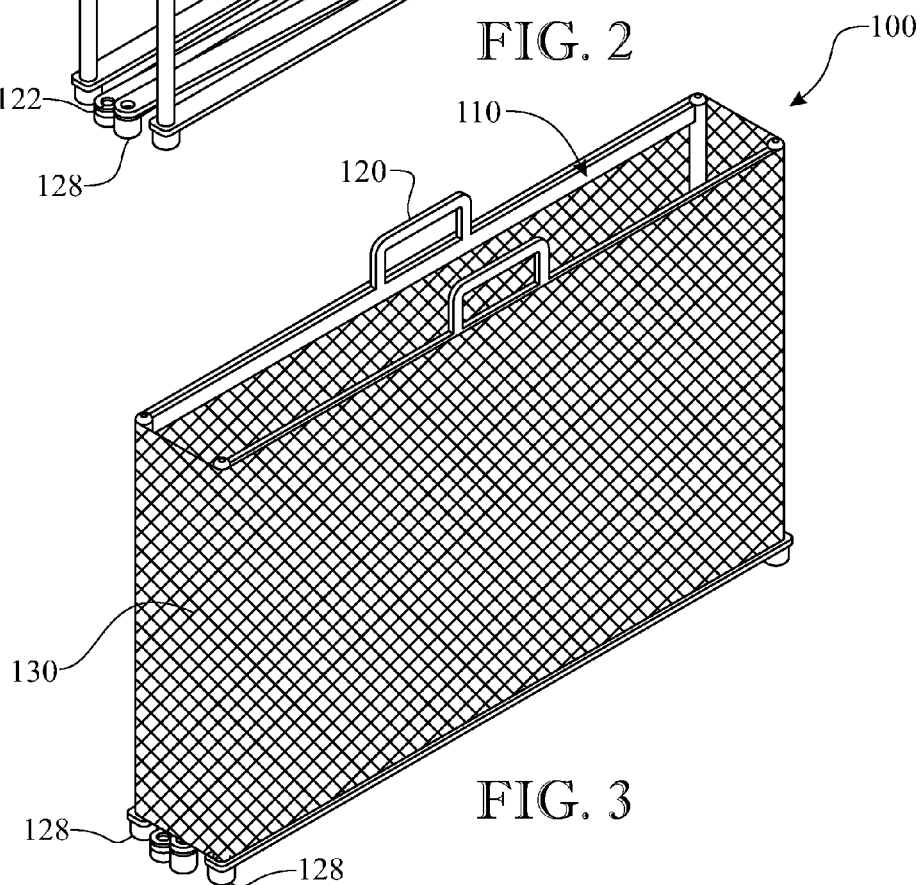


FIG. 3

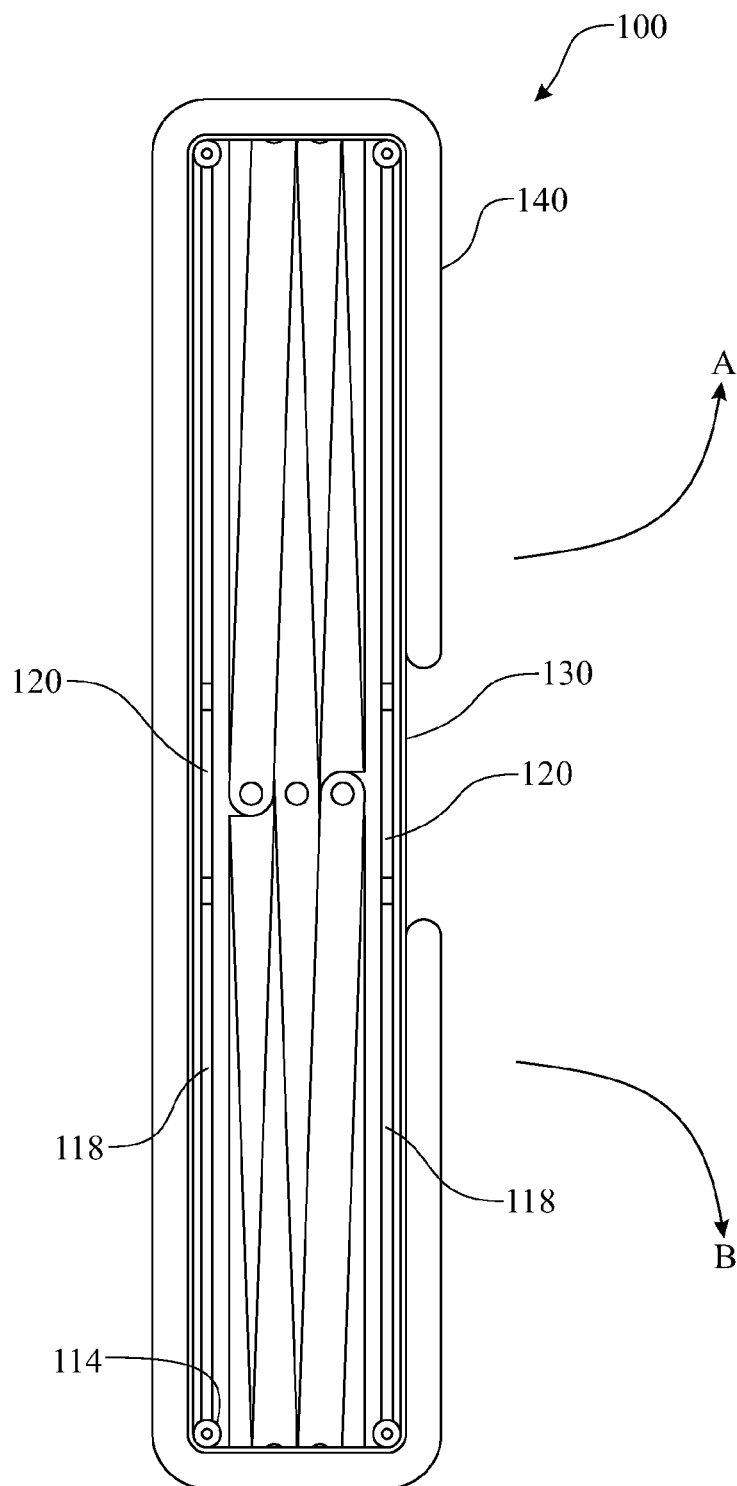


FIG. 4

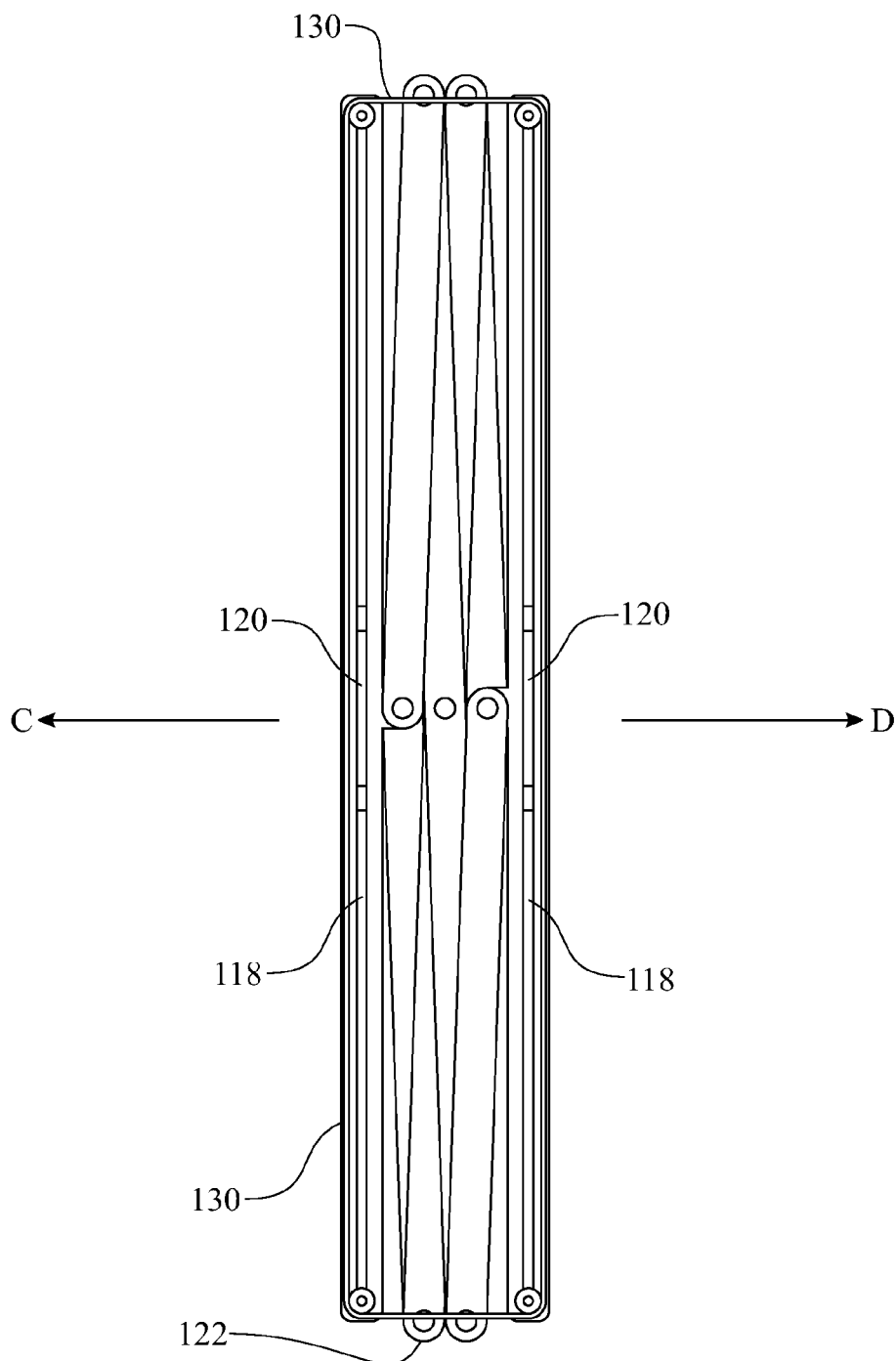
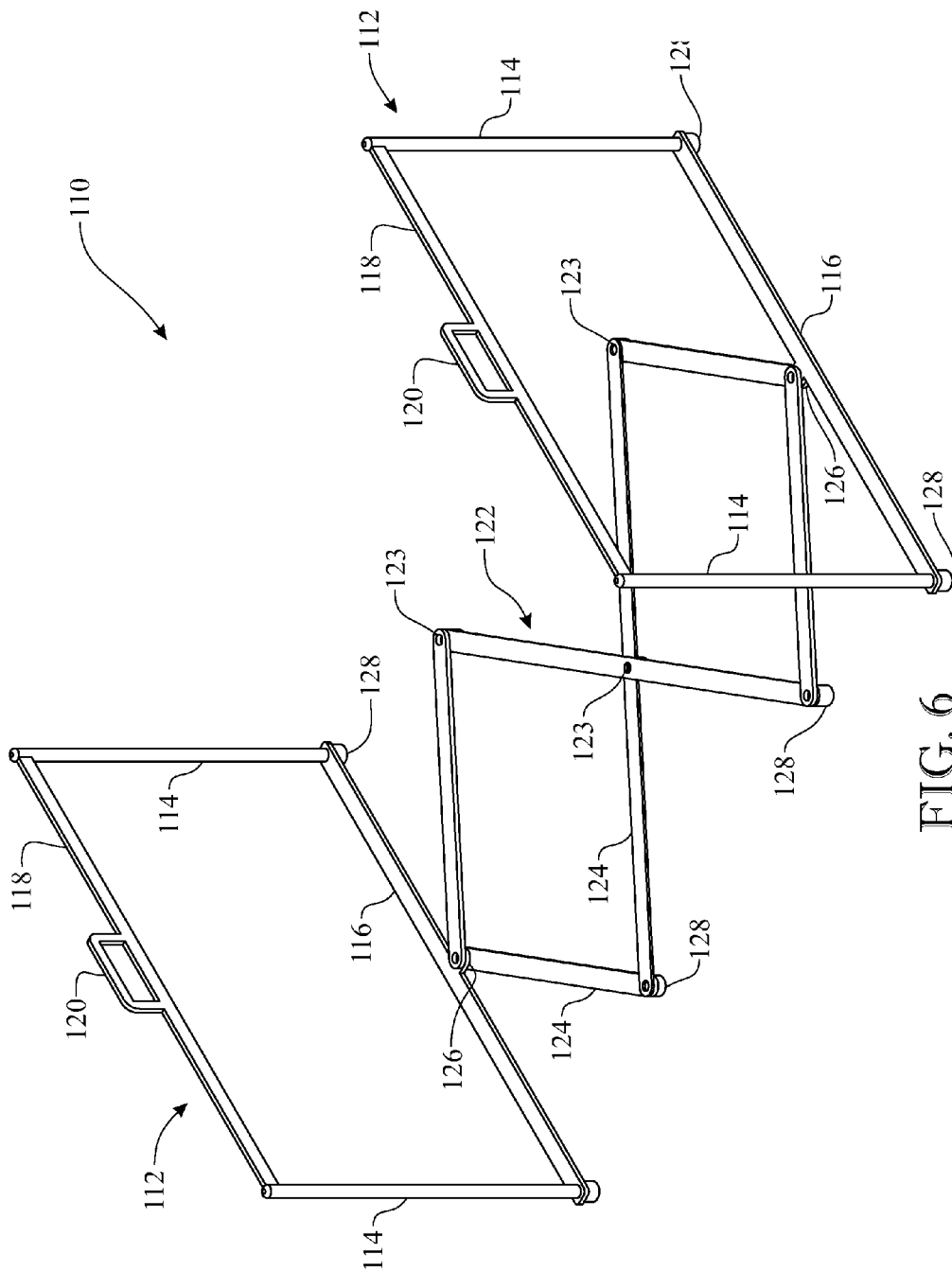


FIG. 5



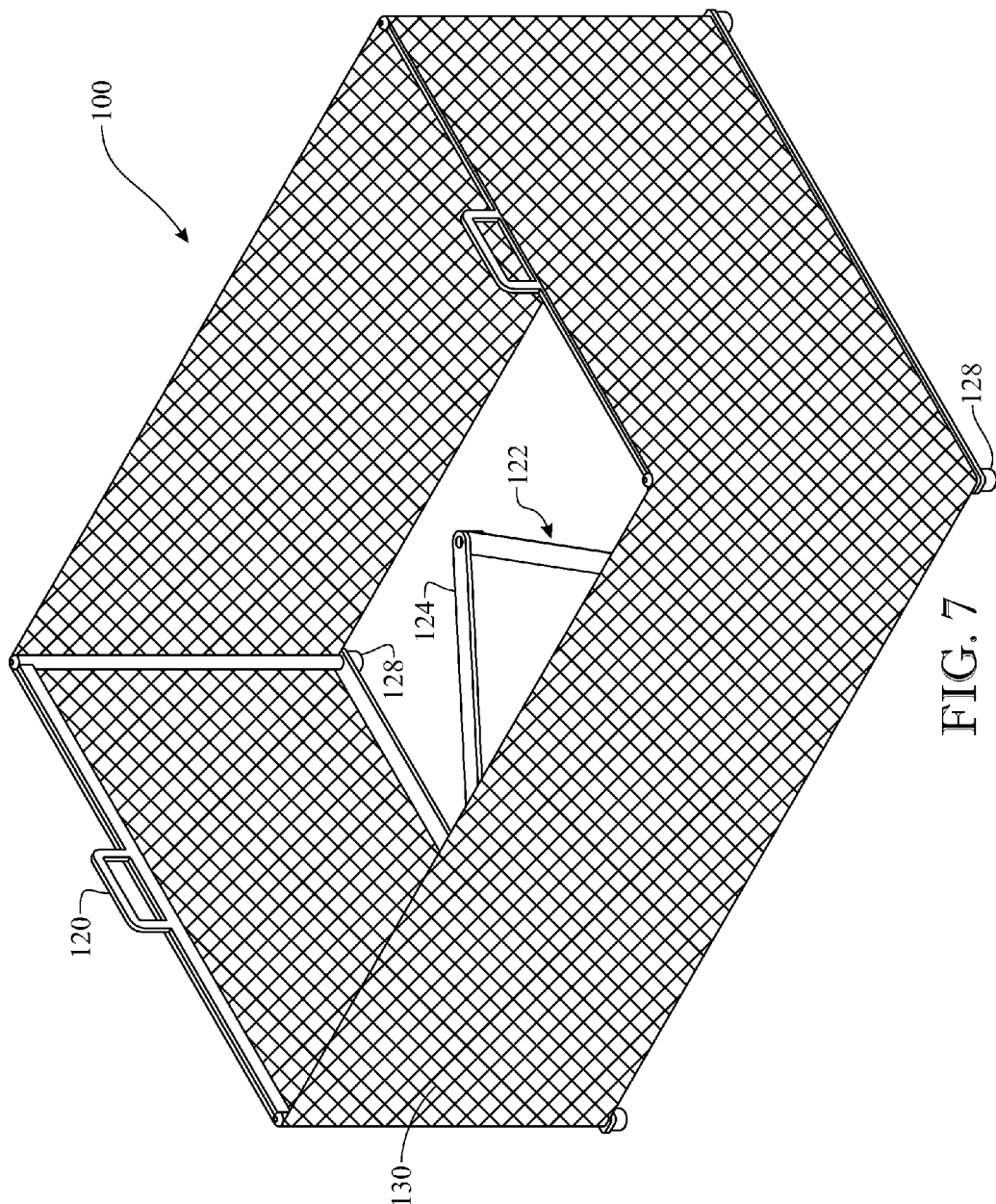


FIG. 7

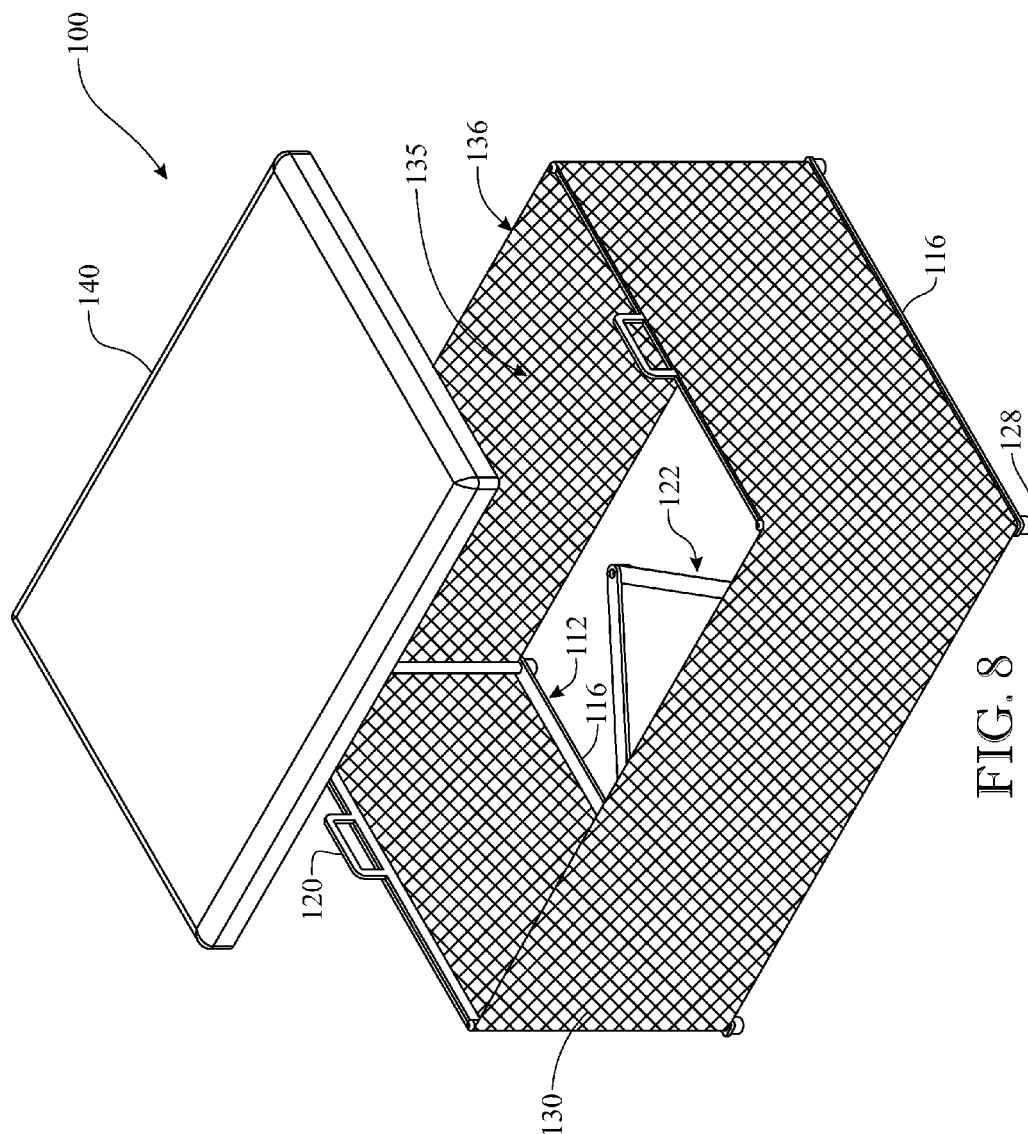


FIG. 8

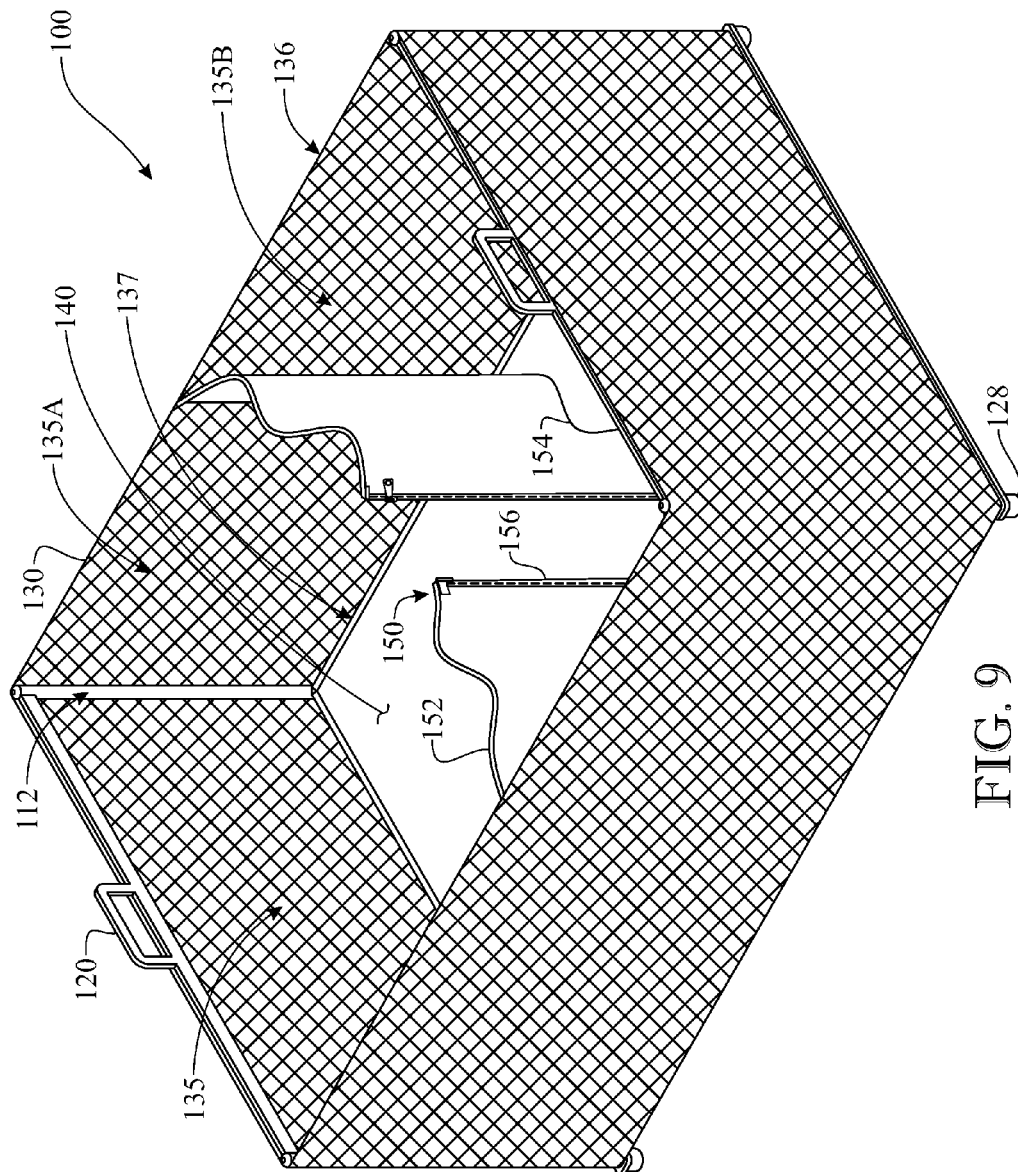


FIG. 9

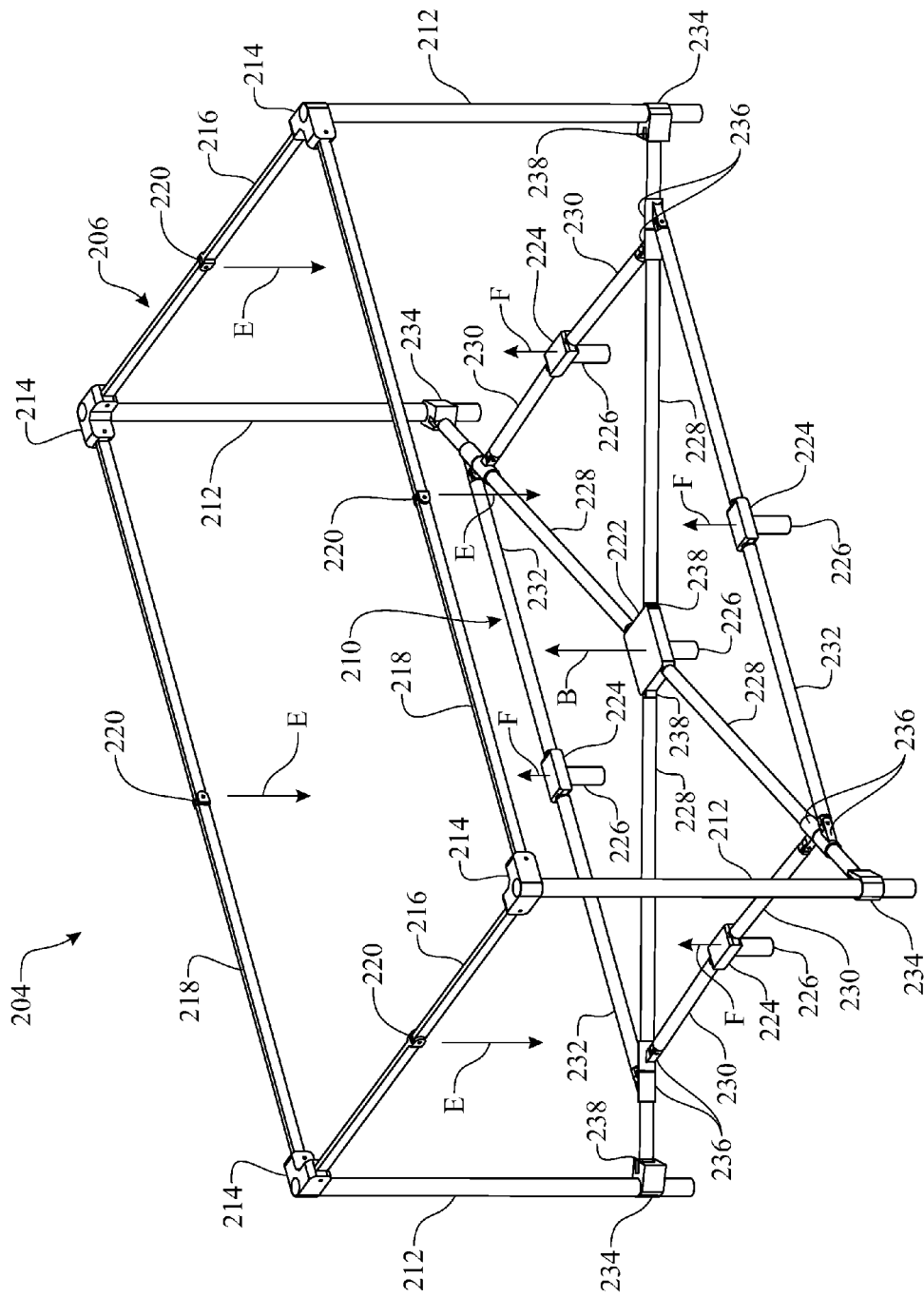


FIG. 10

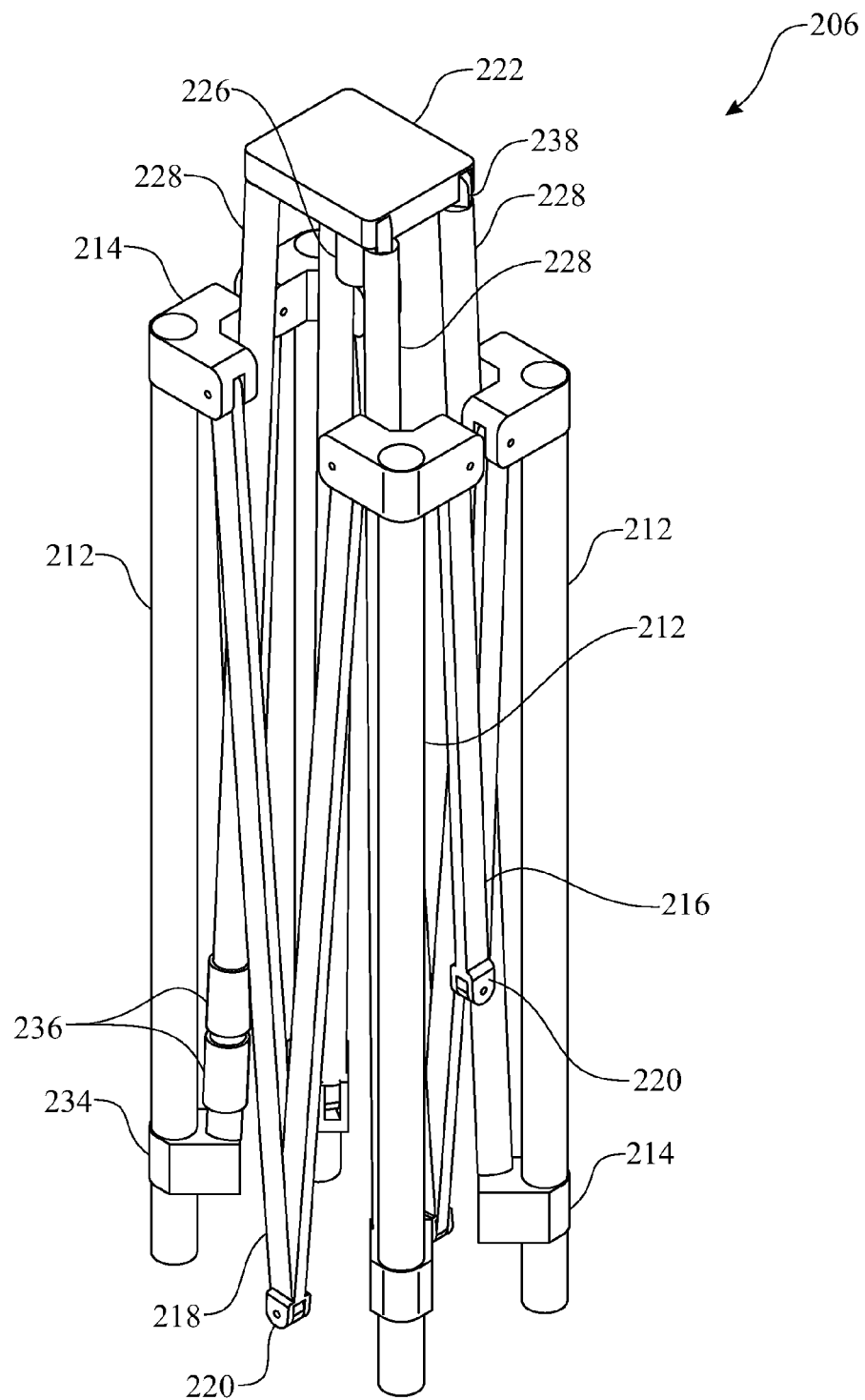


FIG. 11

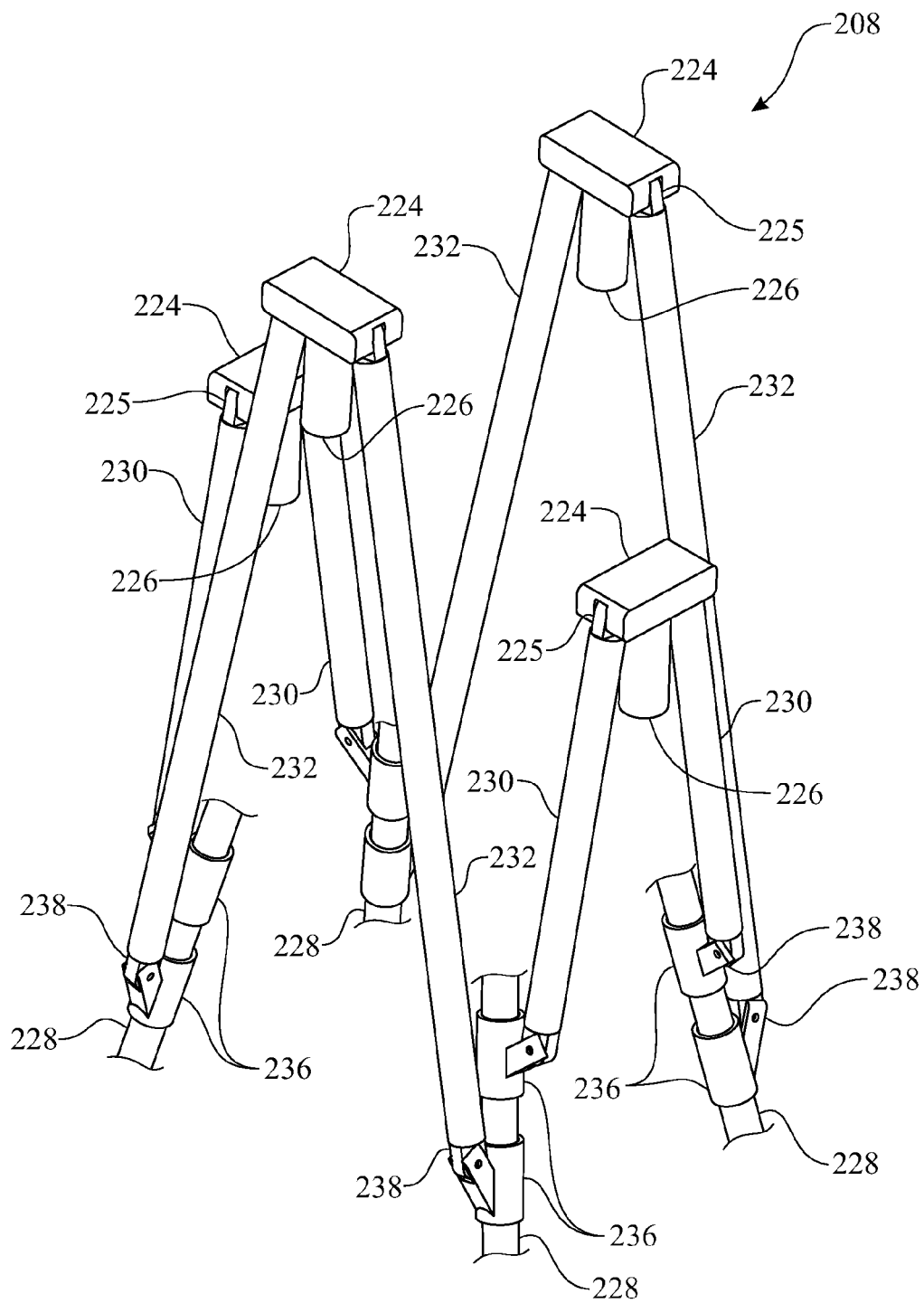


FIG. 12

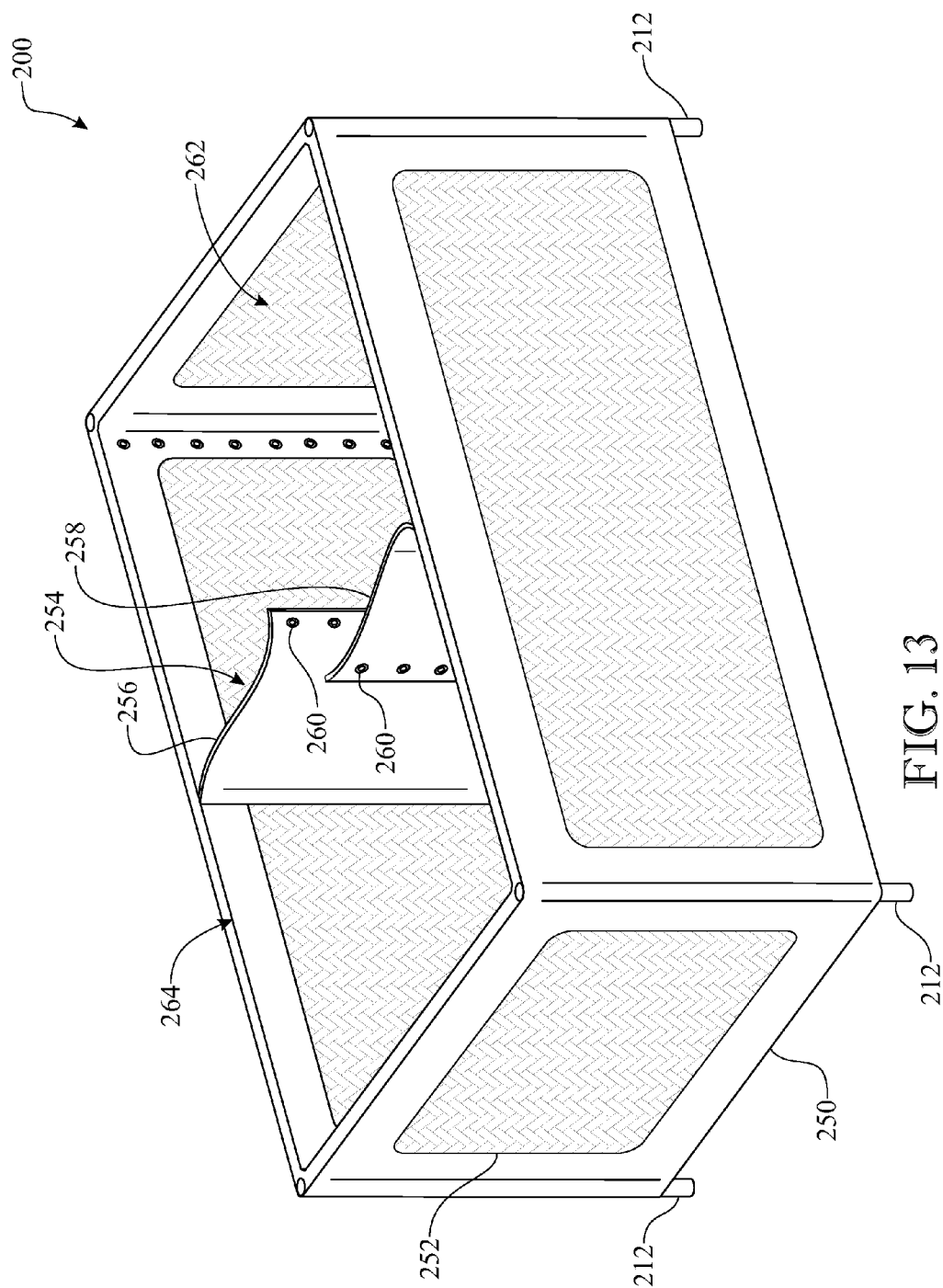


FIG. 13

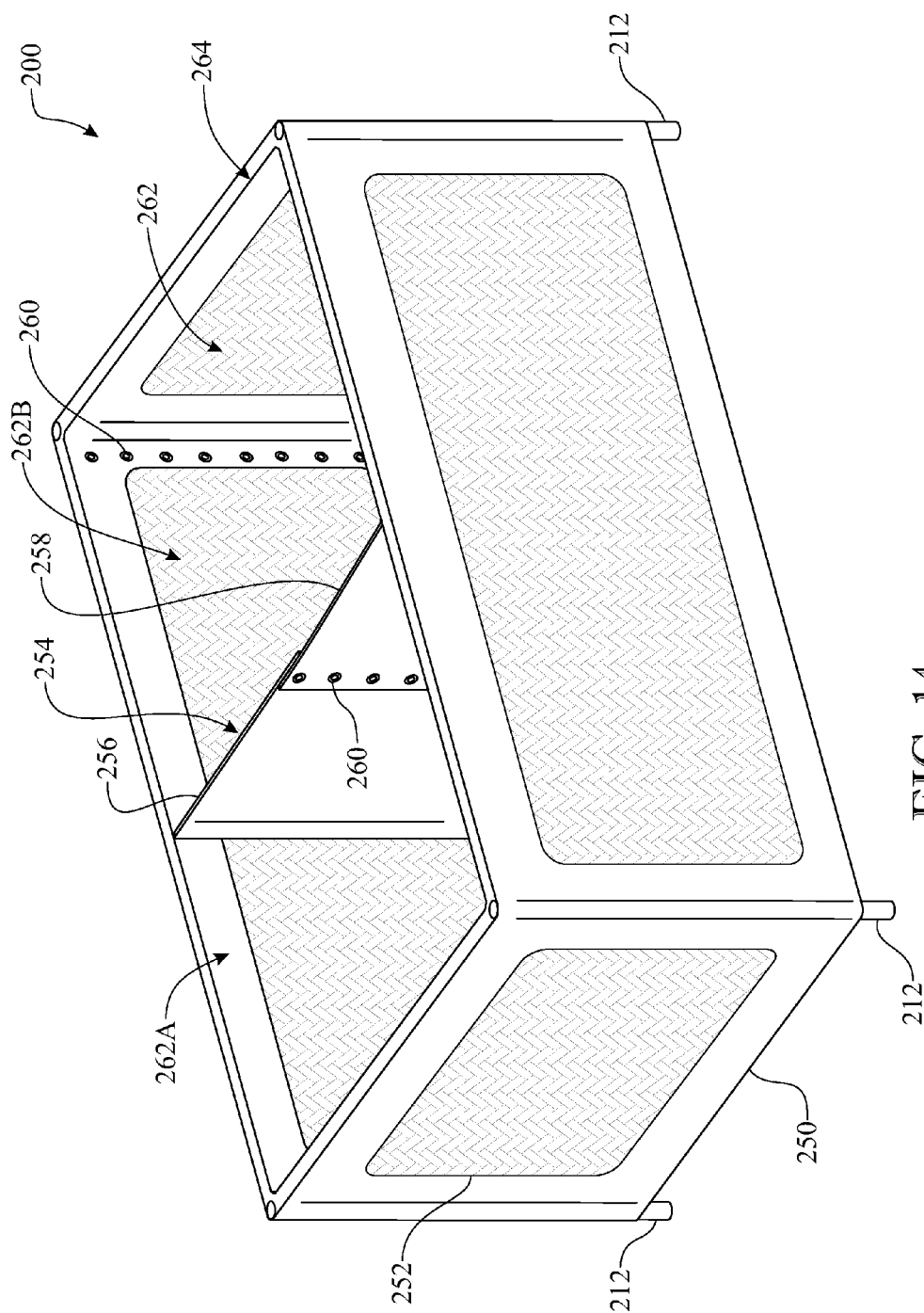


FIG. 14

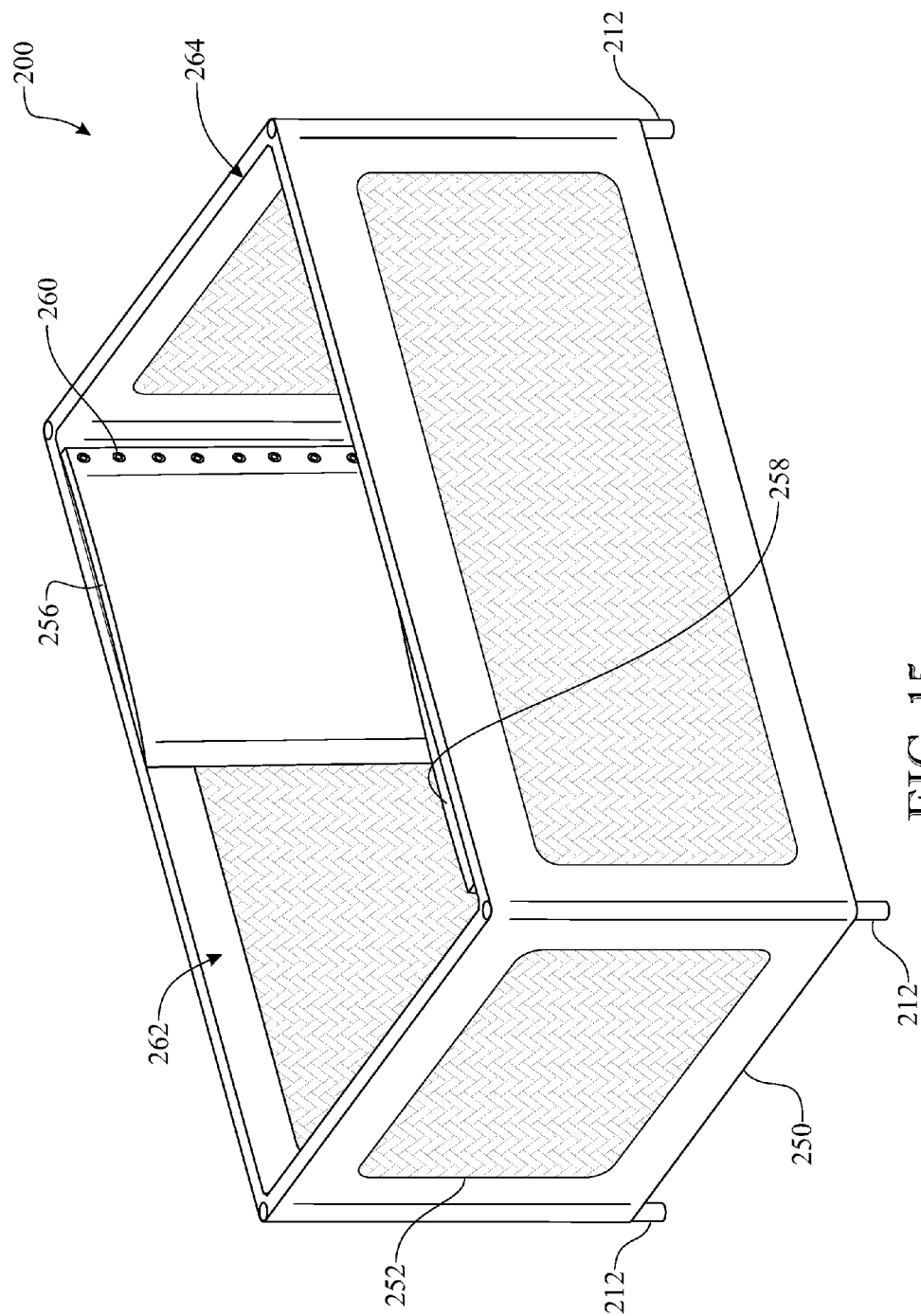


FIG. 15

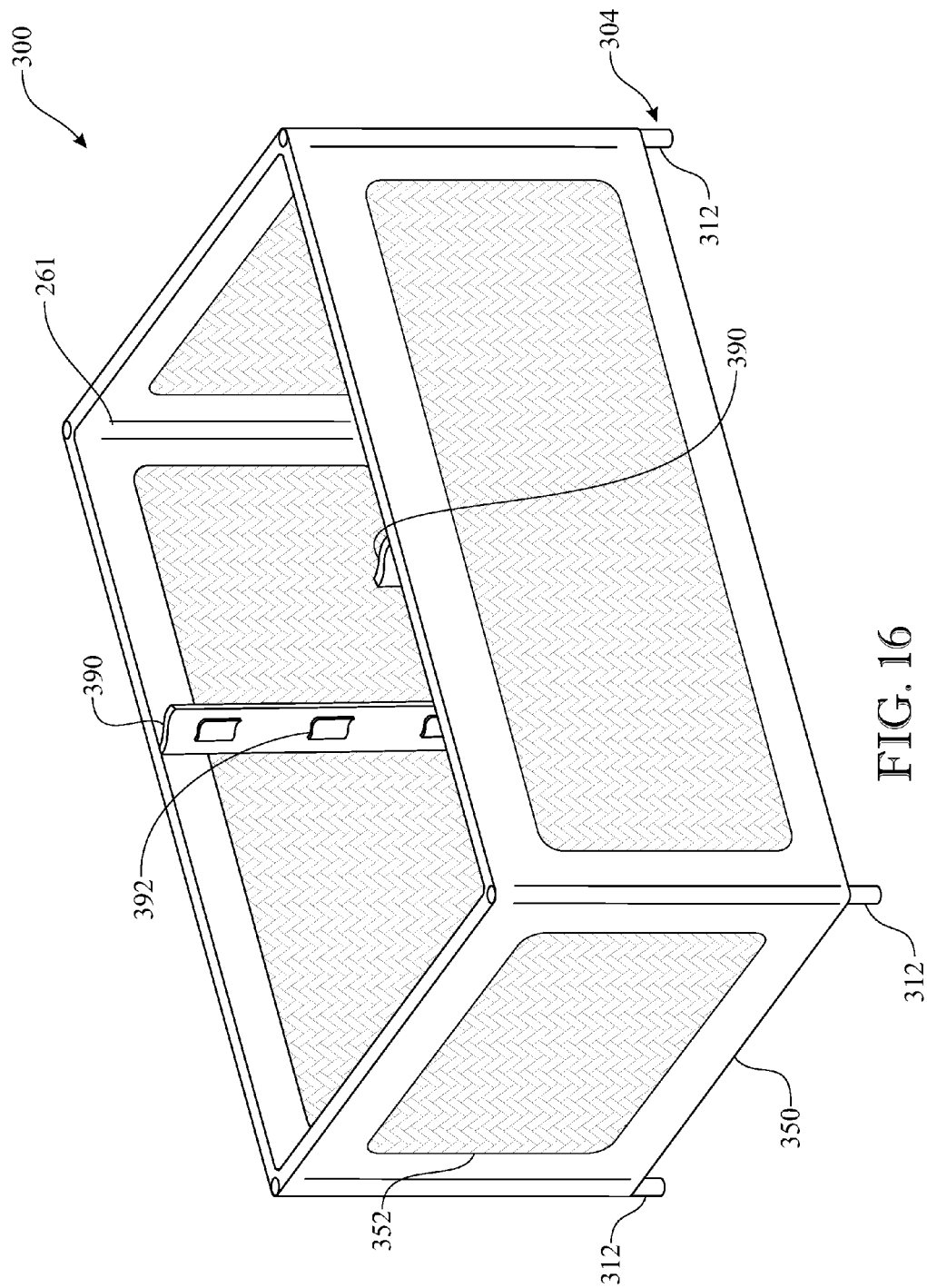


FIG. 16

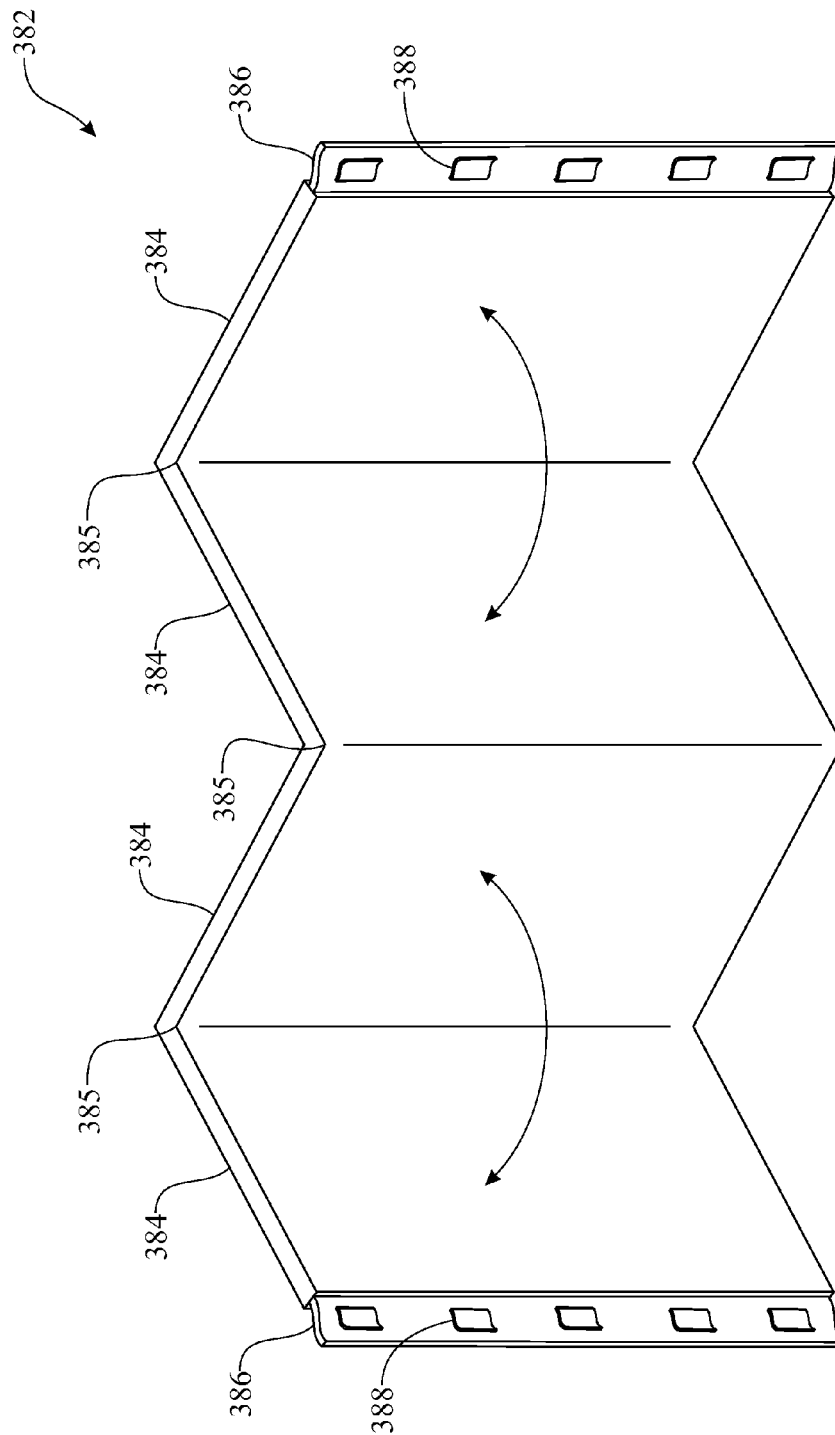
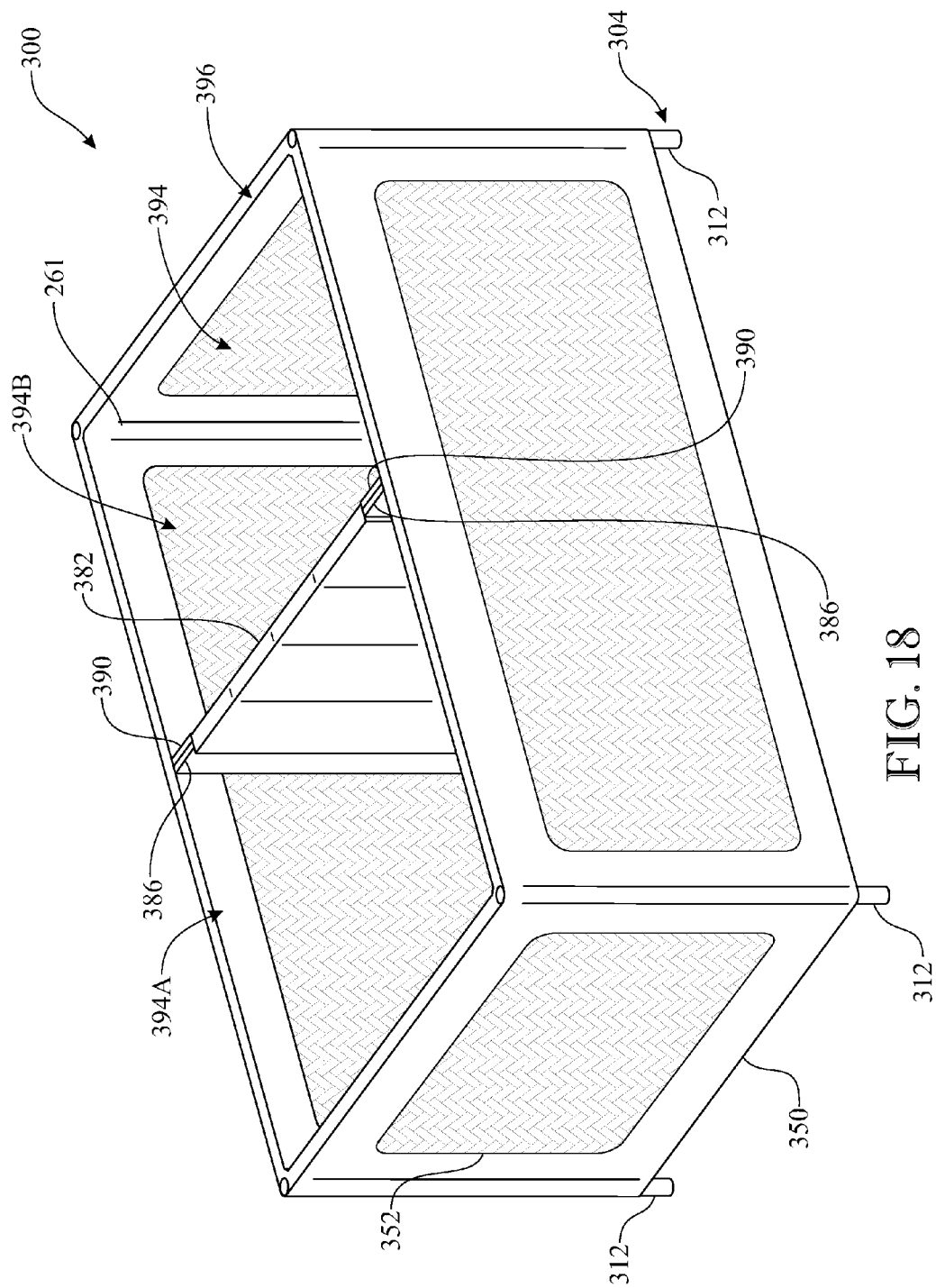


FIG. 17



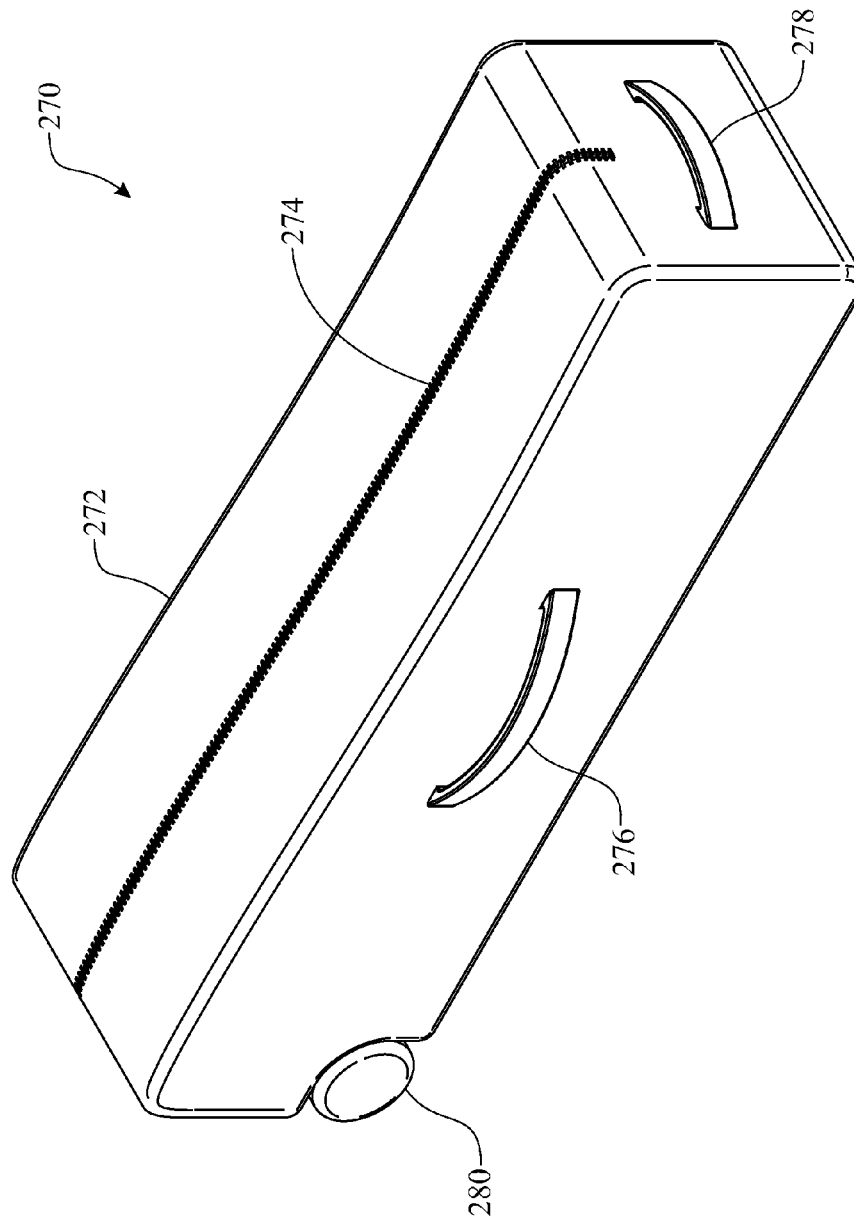


FIG. 19

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FOLDING PLAYPEN AND DUAL SLEEPER**CROSS-REFERENCE TO RELATED APPLICATION**

This Non-Provisional Utility application claims the benefit of U.S. Provisional Patent Application Ser. No. 61/700,931, filed on Sep. 14, 2012, which is incorporated herein in its entirety.

FIELD OF THE INVENTION

The present disclosure generally relates to children's playpen, and more particularly to a folding playpen.

BACKGROUND OF THE INVENTION

A playpen is a piece of furniture in which an infant or young toddler (typically those less than thirty-five inches tall and weighing less than thirty pounds) is placed to prevent self-harm when the child's parent or guardian is occupied or unable to maintain a constant watch over the young child.

Playpens have been utilized by parents for many years and were traditionally made of wood. Early playpens had a flat rectilinear platform, most usually square, and had four sides comprising a plurality of regularly spaced vertical bars extending from a top rail to the bottom platform. This configuration allows the child to see out, but the horizontal spacing of the vertical bars are such to prevent the child from exiting the playpen. The floor of the playpen, the rectilinear platform, is covered with a soft mat for the child's comfort. The vertical barred walls of the playpen are usually higher than the height of the child to prevent injuries from children attempting to climb over the walls. Playpens may also have a detachable lid.

Current playpens have more modern and portable designs and typically comprise a basic metal and plastic support system with mesh, soft plastic or nylon sides extending between the rigid members of the support system. Some playpens include an optional removable bassinet that can be attached at the top in which the child can sleep or utilized to change diapers until the child is a few months of age. Some models of playpens have attachments such as mobiles, side pockets for supplies and toys, and a clip-on adapter to retain an electronic device for playing music so the child can listen to the music while sleeping or playing. Portable playpens are available in different sizes, but most can be collapsed into a small roll for easy storage and transport. However, these portable playpens can be difficult to collapse or disassemble into their compact collapsed state for transport.

Additionally, many families have multiple small children. For example, it is not uncommon for a family to have an infant and a toddler, or a newborn and an infant. Unfortunately, with playpens of the prior art, this usually requires the purchase or acquisition of a multitude of playpens, at least one for each child, as it can be a safety hazard to place a multitude of children of varying ages in one single playpen.

Accordingly, there remains a need in the art for a folding playpen that can be quickly collapsed into a single compact unit for transport and also easily expanded for use. In addition, there remains a need in the art for a folding playpen that can be safely used with more than one child.

SUMMARY OF THE INVENTION

The present disclosure is generally directed to a folding playpen that satisfies the need for a portable playpen that is easily collapsed into a single compact unit for transport and easily expanded for use.

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The folding playpen includes a first rectilinear end frame and a second rectilinear end frame of like size to the first rectilinear end frame and substantially parallel thereto. An extendable scissors mechanism has one end affixed to a bottom of the first rectilinear end frame and a second end affixed to a bottom of the second rectilinear end frame for translating the end frames one with respect to the other between a collapsed configuration and an extended configuration. A flexible plastic mesh extends about a periphery of the first and said second end frames in their extended configuration. A removable bottom pad is inserted over the scissors mechanism when the first and second end frames are in their extended configuration.

In a second aspect, a folding playpen includes a frame assembly selectively collapsible from an extended configuration to a storage configuration. The frame assembly has a plurality of parallel uprights arranged in a geometric configuration and a co-planar grid extending between the plurality of uprights. A flexible covering extends about a periphery of the frame assembly and is selectively removable therefrom. A central divider is selectively extendable between opposing sides of the flexible covering to separate an interior of the playpen into multiple areas. A pad is supported by the co-planar grid.

In another aspect, the central divider extends substantially from a top to a bottom of opposing playpen sides and is selectively attachable to opposing playpen sides in a vertical orientation.

In yet another aspect, the central divider comprises selectively separable panels affixed to opposing sides of said playpen. The panels have fastener portions at ends opposite from the playpen sides and fastened one to the other to divide an interior of the playpen into at least two interior portions.

In yet another aspect, the fastener portions are selected from a group consisting of hook and loop, snap, zipper, and button fasteners.

In yet another aspect, the opposing sides of the playpen each include a tab affixed thereto. The tab extends substantially from a top to a bottom thereof, each tab including fastener portions affixed thereto. The central divider is selectively removable from the playpen interior and has tabs extending from a top to a bottom of opposite ends thereof and including fastener portions on the tabs. The tabs being engaged with the fastener portions on the tabs affixed to the sides of the playpen.

In yet another aspect, the fastener portions are selected from a group consisting of hook and loop, snap, zipper, and button fasteners.

In a further aspect, a folding playpen has a frame assembly having a plurality of parallel uprights arranged in a geometric configuration and a plurality of upper rails pivotally affixed to and extending between a top portion of adjacent ones of the uprights. A co-planar grid extends between the plurality of uprights and includes a central support block having a leg extending downwardly therefrom is substantially positioned at a center of the geometrically configured uprights. A cross brace extends from each upright to the central support block, each cross brace pivotally attached to the central support block and to a respective one of the uprights. A flexible covering extends about a periphery of the frame assembly. A central divider is selectively extendable between opposing sides of the flexible covering to divide an interior of the playpen into multiple areas. A pad is supported by the co-planar grid. The frame assembly is selectively collapsible from an extended configuration to a storage configuration by vertically translating the central support block from a lower position to a position proximate to a top of the uprights.

In yet another aspect, the playpen further including a corner support received at a bottom portion of each upright wherein a respective one of the cross braces is pivotally affixed to the corner support.

In yet another aspect, the co-planar grid further includes a plurality of intermediate braces, each intermediate brace extends between adjacent ones of the cross braces intermediate between the central support block and a respective one of the uprights.

In yet another aspect, each intermediate brace is pivotally attached to respective ones of the cross braces, and further wherein each intermediate brace includes a central hinge such that the intermediate brace can be selectively folded upon itself.

In yet another aspect, each intermediate brace is pivotally attached to a brace fitting at respective ones of the cross braces, the brace fittings being freely translatable along a length of the cross braces.

In yet another aspect, the co-planar grid further includes between each of adjacent ones of the cross braces, a secondary support block having a leg extending downwardly therefrom and a pair of intermediate support braces, a first of the intermediate support braces is pivotally attached to a first of the adjacent cross braces and the secondary support block and a second of the intermediate support braces is pivotally attached to a second of the adjacent cross braces and the secondary support block.

In yet another aspect, each intermediate brace at an end opposite from the secondary support block is pivotally attached to a brace fitting at respective ones of the cross braces, the brace fittings being freely translatable along a length of the cross braces.

In yet another aspect, the flexible covering wherein the central divider comprises a first panel affixed to a first interior side of the flexible covering and a second panel affixed to an opposite second interior side of the flexible covering, the first and the second panels selectively attachable one to the other for dividing an interior of the playpen.

In yet another aspect, the opposing sides of the playpen each include a tab affixed thereto. The tab extends substantially from a top to a bottom thereof, each tab including fastener portions affixed thereto. The central divider is selectively removable from the playpen interior and has tabs extending from a top to a bottom of opposite ends thereof and including fastener portions on the tabs. The tabs being engaged with the fastener portions on the tabs affixed to the sides of the playpen.

In yet another aspect, a folding playpen has a frame assembly having a plurality of parallel uprights arranged in a geometric configuration and a plurality of upper rails pivotally affixed to and extending between a top portion of adjacent ones of the uprights. A corner support is affixed to a bottom portion of each upright. A co-planar grid extends between the plurality of uprights and includes a central support block substantially positioned at a center of the geometrically configured uprights. A cross brace extends from each corner support to the central support block, each cross brace pivotally attached to the central support block and to a respective one of the corner supports. A flexible covering extends about a periphery of the frame assembly. A central divider is selectively extendable between opposing sides of the flexible covering to divide an interior of the playpen into multiple areas. A pad is supported by the co-planar grid. The frame assembly is selectively collapsible from an extended configuration to a storage configuration by vertically translating the central support block from a lower position to a position proximate to a top of the uprights.

These and other features, aspects, and advantages of the invention will be further understood and appreciated by those skilled in the art by reference to the following written specification, claims and appended drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention will now be described, by way of example, with reference to the accompanying drawings, where like numerals denote like elements and in which:

FIG. 1 presents a top isometric view of a folding playpen with the floor pad installed in the bottom of the playpen in an expanded configuration;

FIG. 2 presents an isometric view of a playpen frame of the playpen, originally introduced in FIG. 1, in a collapsed configuration;

FIG. 3 presents an isometric view of the collapsed playpen frame of the playpen, originally introduced in FIG. 1, including a plastic mesh surrounding the playpen frame;

FIG. 4 presents a top plan view of the playpen, originally introduced in FIG. 1, in a collapsed configuration and including a floor pad stowed about an exterior of the collapsed playpen;

FIG. 5 presents a top plan view of the playpen, originally introduced in FIG. 1, in a collapsed configuration with the floor pad removed immediately prior to expanding the playpen;

FIG. 6 presents a top isometric view of the playpen frame of the playpen, originally introduced in FIG. 1, in its expanded configuration;

FIG. 7 presents a top isometric view of the playpen, originally introduced in FIG. 1, in its expanded configuration with the plastic mesh surrounding the playpen;

FIG. 8 presents a partially exploded top isometric view of the playpen, originally introduced in FIG. 1, and the floor pad;

FIG. 9 presents a top isometric view of the playpen, originally introduced in FIG. 1, including a central divider;

FIG. 10 presents a top isometric view of a playpen frame of an alternate embodiment folding playpen, in an expanded configuration;

FIG. 11 presents a top isometric view of a folded primary frame of the playpen frame, originally introduced in FIG. 10;

FIG. 12 presents a top isometric view of a folded secondary floor support frame of the playpen frame, originally introduced in FIG. 10;

FIG. 13 presents a top isometric view of an expanded assembled playpen, utilizing the playpen frame originally introduced in FIG. 10, with a playpen frame covering and a separated center divider;

FIG. 14 presents a top isometric view of the expanded assembled playpen of FIG. 13 with a fastened center divider;

FIG. 15 presents a top isometric view of the expanded assembled playpen of FIG. 13 with the center divider unfastened and stowed against the playpen sides;

FIG. 16 presents a top isometric view of an alternate embodiment playpen having a removable center divider with the divider removed;

FIG. 17 presents a top isometric view of the removed center divider for the playpen of FIG. 16;

FIG. 18 presents a top isometric view of the playpen, originally introduced in FIG. 16, with the folding divider installed; and

FIG. 19 presents a top isometric view of a carrying case for embodiments of the folding playpen.

Like reference numerals refer to like parts throughout the various views of the drawings.

DETAILED DESCRIPTION OF THE INVENTION

The following detailed description is merely exemplary in nature and is not intended to limit the described embodiments or the application and uses of the described embodiments. As used herein, the word “exemplary” or “illustrative” means “serving as an example, instance, or illustration.” Any implementation described herein as “exemplary” or “illustrative” is not necessarily to be construed as preferred or advantageous over other implementations. All of the implementations described below are exemplary implementations provided to enable persons skilled in the art to make or use the embodiments of the disclosure and are not intended to limit the scope of the disclosure, which is defined by the claims. For purposes of description herein, the terms “upper”, “lower”, “left”, “rear”, “right”, “front”, “vertical”, “horizontal”, and derivatives thereof shall relate to the invention as oriented in FIG. 1. Furthermore, there is no intention to be bound by any expressed or implied theory presented in the preceding technical field, background, brief summary or the following detailed description. It is also to be understood that the specific devices and processes illustrated in the attached drawings, and described in the following specification, are simply exemplary embodiments of the inventive concepts defined in the appended claims. Hence, specific dimensions and other physical characteristics relating to the embodiments disclosed herein are not to be considered as limiting, unless the claims expressly state otherwise.

In one exemplary implementation of the invention, a folding playpen 100 is shown in FIG. 1 where the playpen 100 includes two substantially identical rectilinear end frames 112 laterally separated one from the other, a co-planar grid 122 interconnecting the rectilinear end frames 112 proximate bottom ends thereof, and a flexible mesh 130 extending about a rectilinear perimeter defined by the two rectilinear end frames 112 and the co-planar grid 122 so as to form a rectilinear play area or interior 135 of the playpen 100 defined by the flexible covering or mesh 130. The playpen 100 also includes a removable bottom pad 140 on which a child may sit, rest, or play. The playpen 100 is supported above the floor level on which it rests by a plurality of support feet 128 that are typically formed of a resilient material to prevent slippage on a smooth floor surface and to prevent the playpen 100 from scratching the floor surface.

As best shown in FIG. 2 with the flexible mesh 130 removed for clarity, the two rectilinear end frames 112 and the co-planar grid in the form of a contractible and extendable scissors mechanism 122 interconnecting the rectilinear end frames 112 form a frame assembly 110 of the playpen 100 that is convertible between a collapsed configuration as shown in FIG. 2 and an expanded configuration as shown in FIG. 6. Each rectilinear end frame 112 is substantially vertical and includes two laterally separated uprights 114 forming the corners of the playpen 100. The uprights 114 are laterally separated one from the other and are connected by a horizontal bottom frame member 116 and a horizontal top frame member 118. The horizontal top frame member 118 includes a handle 120 integrally formed therein to aid in carrying the playpen 100 by a user. The two laterally separated vertical rectilinear end frames 112 are maintained in an upright selectively expandable and contractible relationship by the scissors mechanism 122. Each end of the scissors mechanism 122

is connected to a respective one of the rectilinear frames 112 at a scissors attachment lug 126 (FIG. 6) formed as part of the bottom frame member 116.

Referring now to FIG. 3, the collapsed frame assembly 110 is surrounded by a flexible mesh 130. The flexible mesh 130 can be of many known configurations that include the characteristics of being flexible, having a plurality of holes therethrough to permit air flow and to allow visibility therethrough. The flexible mesh 130 can be expandable to conform to the collapsed and expanded configurations of the frame assembly 110.

As shown in FIG. 4, the playpen 100 is shown in its collapsed configuration for storage or for convenient transport. The bottom pad 140 is folded about an exterior of the collapsed playpen 100 to form a compact configuration. When a user desires to use the playpen 100, the ends of the bottom pad 140 are peeled away from the collapsed playpen 100 in opposite directions as designated by the arrows “A” and “B”. Once the bottom pad 140 has been removed from the collapsed playpen 100, the playpen 100 can be expanded by pulling the vertical rectilinear frames 112, one away from the other, as illustrated by arrows “C” and “D” (FIG. 5).

As best shown in FIG. 6, the expanded frame assembly 110 includes the two vertical rectilinear frames 112 substantially parallel one to the other and separated one from the other by the scissors mechanism 122. The scissors mechanism 122 is of a standard known configuration and is comprised of a plurality of scissors elements 124 hinged together at hinge points 123 in a manner to permit the rectilinear frames 112 to laterally separate and collapse one with respect to the other. The scissors mechanism 122 is affixed to vertical rectilinear frames 112 at the scissors attachment lugs 126 formed substantially at a midpoint of the bottom frame member 116. Each hinge point 123 as well as the vertical uprights 114 are supported by support feet 128 to prevent sliding of the playpen 100 or the scratching of a floor surface on which the playpen 100 is resting. Further, as shown in FIG. 7, the playpen 100 includes therearound the flexible mesh 130 to act as a barrier to keep a child inside the playpen 100, while allowing airflow therethrough and maintaining visibility to the interior of the playpen 100.

As illustrated in FIG. 8, once the flexible mesh 130 surrounding playpen frame assembly 110 has been expanded, the unfolded support pad 140 is inserted into the interior 135 of the playpen 100 through a rectilinear open top 136 thereof as defined by the surrounding flexible mesh 130. When fully inserted, the support pad 140 rests and is supported on the scissors mechanism 122 and the bottom frame members 116 of rectilinear end frames 112 (FIG. 1) so as to provide a closed bottom 137 (FIG. 9) of the interior 135 of the playpen 100 surrounded by the flexible mesh 130.

Referring now to FIG. 9, the playpen 100 can also include a central divider 150 disposed in the interior 135 of the playpen 100, extending from one side of the flexible mesh 130 on one side of the playpen 100 to an opposing side of the flexible mesh 130 on an opposite side of the playpen 100. The central divider 150 can also be formed of a first panel 152 and a second panel 154, each having one edge thereof affixed to a respective one of the opposing sides of the flexible mesh 130 on the respective opposite sides of the playpen 100 and sized to meet in the middle of the playpen 100. The first and second panels 152, 154 can each have a portion of a zipper 156 affixed thereto, thereby permitting the selective separation and closure of the first panel 152 with respect to the second panel 154. When the first and second panels 152, 154 are zipped together, the central divider 150 extends across the playpen interior 135 and in a vertical orientation within the

playpen interior **135** substantially from proximate to the open top **136** to proximate to the closed bottom **137** thereof. In such disposition and orientation the central divider **150** divides the interior **135** of the playpen **100** into two interior portions **135A**, **135B** located adjacent to one another but at opposite sides of the central divider **150**, each interior portion having a corresponding portion of the open top **136** defined by the flexible mesh **130** and a corresponding portion of the closed bottom **137** defined by the support pad **140** resting and supported on the scissors mechanism **122**.

An alternate embodiment playpen **200** (FIG. **14**) includes a supporting frame assembly **204** (FIG. **10**) comprised of a primary frame **206** (FIG. **11**) and a cooperating secondary floor support frame **208** (FIG. **12**). The illustrations of the primary frame **206** in FIG. **11** and the cooperating secondary floor support frame **208** in FIG. **12** have been separated one from the other for the sake of clarity, however, those practiced in the art will readily recognize that the primary frame **206** and the secondary support frame **208** are integrated one with the other for unified operation as discussed in greater detail below.

Referring to FIGS. **10** and **11**, the primary frame **206** has a plurality of parallel corner uprights **212** arranged in a rectilinear pattern. A corner fitting **214** is affixed to the upper end of each corner upright **212**. Each corner fitting is formed in an “L” shape and is spatially oriented to correspond to the rectilinear pattern formed by the corner uprights **212**. Adjacent ones of the corner fittings **214** are interconnected by a pair of upper end rails **216** and a pair of upper side rails **218**. Upper end rails **216** are of an equal first length and upper side rails **218** are of an equal second length wherein the upper side rails **218** are typically of greater length than the upper end rails **216**. However, upper end rails **216** can equal the length of the upper side rails **218** to form a substantially square playpen **200**. Alternatively, the uprights **212** can form other known geometric configurations and employ the inventive concepts disclosed herein. Upper end rails **216** and upper side rails **218** are hinged at respective midpoints with hinges **220** which permit the rails **216**, **218** to be folded when moving the hinges **220** in the direction of arrows “E”. When rails **216**, **218** are extended, they are selectively locked in the extended position to form the rectilinear shape of the playpen **200**.

A corner support **234** is affixed proximate to the bottom of each corner upright **212**, and a center support block **222** is positioned at the center of the rectilinear arrangement formed by the corner uprights **212**. A cross brace **228** extends from the center support block **222** to each of the corner supports **234**. The cross braces **228** are affixed to the center support block **222** and the corner supports **234** with hinges **238** thereby allowing cross braces **228** to pivot with respect to the center support block **222** and the corner supports **234**. When extended, the cross braces **228** in diagonal fashion substantially form an “X” pattern to provide a co-planar support at the lower end of the frame assembly **204**. The center support block includes a leg **226** extending downward to bear upon the surface on which the playpen **200** is placed. The length of leg **226** supports center support block **222** in a substantially co-planar manner with the corner supports **234**.

Referring now to FIGS. **10** and **12**, the frame assembly **204** also includes the secondary floor support frame **208**. The secondary floor support frame **208** includes a pair of intermediate end braces **230** centrally joined by a secondary support block **224** and extending between adjacent ones of cross braces **228** at opposing ends of the playpen **200**. The intermediate end braces **230** are pivotally joined to the secondary support blocks **224** and also pivotally joined to brace fittings **236**. The brace fittings **236** are slidably received on the

respective cross braces **228** between which the intermediate end braces **230** extend. In like manner, the secondary floor support frame **208** also includes a pair of intermediate side braces **232** centrally joined by a secondary support block **224** and extending between adjacent ones of cross braces **228** at opposing sides of the playpen **200**. The intermediate side braces **232** are pivotally joined to the secondary support blocks **224** and also pivotally joined to brace fittings **236**. The brace fittings **236** are slidably received on the respective cross braces **228** between which the intermediate end braces **230** extend. Each secondary support block **224** includes a leg **226** extending downward to bear upon the surface on which the playpen **200** is placed. The length of leg **226** supports its respective secondary support block **224** in a substantially co-planar manner with the corner supports **234**. The braces, **228**, **230**, **232** and the support blocks **222**, **224** can be hinged together by hinges **125** and, in combination, form a substantially co-planar grid **210** which supports a bottom pad, such as the bottom pad **140** described above on which a baby can rest while in the playpen **200**.

Alternatively, a single intermediate brace **230**, **232** can extend between adjacent ones of the cross braces **228** wherein the intermediate brace **230**, **232** is centrally hinged permitting the intermediate brace **230**, **232** to be folded against itself in a fashion similar to the folding upper rails **216**, **218**.

As illustrated in FIGS. **13** through **15**, the ends and sides of the frame assembly **204** of the playpen **200** are surrounded by a flexible covering **250** which substantially extends between adjacent ones of corner uprights **212** and can include inserts **252** of a mesh to permit the circulation of air for the comfort of a baby placed in an interior **262** of the playpen **200** defined by the flexible covering **250**. The playpen **200** also includes a removable bottom pad, similar to bottom pad **140** described above, on which a child may sit, rest, or play. The bottom pad can be segmented to fold into a desired shape consistent with the collapsed configuration of the playpen **200** as described further below.

The playpen **200** also includes a central divider **254** disposed in the interior **262** of the playpen **200**, extending from one side of the flexible covering **250** on one side of the playpen **200** to an opposing side of the flexible covering **250** on an opposite side of playpen **200**. The central divider **254** can also be formed of a first panel **256** and a second panel **258**, each having one edge thereof affixed to a corresponding one of the opposing sides of the flexible covering **250** on opposite sides of the playpen **200** and sized to joinably meet in the middle of the playpen **200**. The first and second panels **252**, **254** can each have a portion of fasteners **260** affixed thereto, thereby permitting the selective separation and closure of the first panel **256** with respect to the second panel **258**. When the first and second panels **256**, **258** are fastened to one another as seen in FIG. **14**, the central divider **254** extends across the playpen interior **262** and in a vertical orientation within the playpen interior **262** substantially from proximate to an open top **264** to proximate to a closed bottom (not shown) of the playpen interior **262**. In such disposition and orientation the central divider **254** divides the interior **262** of the playpen **200** into two interior portions **262A**, **262B** located adjacent to one another but at opposite sides of the central divider **254**, each interior portion having a corresponding portion of the open top **264** defined by the flexible covering **250** and a corresponding portion of the closed bottom (not shown) defined by the bottom pad, resting and supported on the co-planar grid **210** (FIG. **10**). When the playpen **200** is to be used undivided by the central divider **254**, each of the first and second panels **256**, **258** can be stowed against the sides of the playpen **200** by

engagement with matching portions of fasteners 260 on the sides of the playpen 200, as best illustrated in FIG. 15.

An alternate embodiment playpen 300 is illustrated in FIGS. 16-18 wherein the playpen 300 includes a frame assembly 304 identical to the frame assembly 204 which is surrounded by a flexible covering 350 which extends between adjacent ones of corner uprights 312 and can also include inserts 352 of a mesh to permit the circulation of air for the comfort of a baby placed in the interior thereof. Opposing tabs 390 can be permanently affixed to midpoints of opposing sides of the playpen 300. The tabs 390 extend substantially from the top to the bottom of the playpen 300 and include thereon a plurality of hook and loop fastener segments 392, or alternatively a single strip of hook and loop fastener extending the length of the tabs 390.

A central divider 382 (FIG. 17) includes a plurality of individual panels 384 interconnected by integral hinges 385, or folds, and arranged such that the panels 384 can be folded one against an adjacent panel 384 for convenient storage and transport. A tab 386 is attached at each end of the central divider 382 extending from a top to a bottom thereof. The tabs 386 include thereon a plurality of hook and loop fastener segments 388, or, alternatively, a single strip of hook and loop fastener extending the length of the tabs 386. The hook and loop fastener segments 388, 392 are arranged such that segments 388, 392 are interlocking segments one with the other in a manner well known in the art. Those practiced in the art will recognize that the fasteners 388, 392 utilized to attach the central divider 382 to the tabs 390 can be hook and loop, snap, zipper, button or other known fasteners.

The central divider 382 can be installed by unfolding the central divider 382 and placing the central divider 382 so that its tabs 386 are proximate to corresponding ones of tabs 390 on opposing sides of the flexible covering 350 of the playpen 300, as seen in FIG. 18. Like positioned ones of the hook and loop segments 388, 392, as seen in FIGS. 17 and 16, are engaged one with the other thereby dividing the playpen interior 394 into two distinct areas or interior portions 394A, 394B, as seen in FIG. 18, wherein different babies can be placed without interacting one with the other. When installed in the playpen interior 394 as seen in FIG. 18, the central divider 382 extends across the playpen interior 394 and in a vertical orientation substantially from proximate to an open top 396 to proximate to a closed bottom (not shown) of the interior 394 of the playpen 300. In such disposition and orientation the central divider 382 divides the playpen interior 394 into the two interior portions 394A, 394B located adjacent to one another but at opposite sides of the central divider 382, each interior portion having a corresponding portion of the open top 396 defined by the flexible covering 350 and a corresponding portion of the closed bottom defined by the support pad, similar to the pad 140 described above, resting and supported on the co-planar grid (not shown) of the playpen 300. Once the playpen 300 is desired to be used with only a single large interior area, the hook and loop segments 388, 392 are disengaged one from the other. The central divider 382 is then removed from the playpen 300 and is folded at hinges 385 for storage or transport.

Referring to FIG. 19, a carrying case 270 is illustrated which conforms to the size and shape and is receptive of a folded playpen 200 for storage or transportation of the playpen 200. The carrying case 270 comprises a durable case 272 and has an interior selectively accessible through zipper 274. A side handle 276 facilitates a user to pick up and carry the stored playpen 200. An alternate end handle 278 in combination with wheels 280 permits a user to raise the carrying case

270 at one end and be able to roll the carrying case 270 and stored playpen 200 on the wheels 280 in a known fashion.

In use, and referring again to FIGS. 10 through 19, the playpen 200 can be transitioned from a stored configuration by removing the folded playpen 200 from the carrying case 279 through the zipper 274 to an extended configuration as illustrated by the configuration of the frame assembly 204 in FIG. 10 and covered configuration of FIG. 13. The zipper 274 is opened and the folded frame 204 is removed from the carrying case 270 and placed in an upright orientation as illustrated in FIGS. 11 and 12. The corner uprights 212 are moved away one from the other. This expansion results in the lowering of the center support block 222 and secondary support blocks 224 toward the surface on which the playpen 200 is to be supported. As the frame 204 unfolds, the various brace fittings 236 connecting the intermediate end and side braces 230, 232 to the cross braces 228 are free to translate along the length of the cross braces 228 and, as a result of the angular orientation of the cross braces 228 one with the others, will automatically be positioned in the deployed configuration when the frame assembly 204 is fully expanded. As the frame assembly 204 expands, the corner uprights 212 move into their designed rectilinear configuration and the cross braces 228, center support block 222, intermediate braces 230, 232, and secondary support blocks 224 expand into a substantially co-planar configuration. The support blocks 222, 224 are supported on the floor surface by the legs 226 extending downwardly therefrom. The flexible covering 250 is then fitted over the frame assembly 250 and the bottom pad, such as one similar to bottom pad 140, is placed in the fitted flexible covering 250 to rest upon the braces 228, 230, 222 and support blocks 222, 224. The playpen 200 is then ready for use either as a single enclosure with panels 256, 258 separated one from the other, or as a dual enclosure where panels 256, 258 are connected with fasteners 260 to form a central divider 254.

After completion of use, the playpen 200 can be collapsed and stored in reverse fashion as described above. The bottom pad is removed and folded for storage, and the flexible covering 250 is removed from the frame assembly 204 and folded for storage. To collapse the frame assembly 204 to its storage configuration, the center support block 222 and the secondary support blocks 224 are, in near simultaneous fashion, raised. As the support blocks 222, 224 are raised, the braces 228, 230, 232 are angled from their co-planar relationship and the corner uprights 212 are gradually drawn into the collapsed, folded configuration of FIGS. 11 and 12. The folded frame assembly 204, the folded covering 250, and the folded bottom pad can be placed in the carrying case 270 and the zipper 274 closed to a folded and compact configuration convenient for transporting and storage in the carrying case 270.

Since many modifications, variations, and changes in detail can be made to the described preferred embodiments of the invention, it is intended that all matters in the foregoing description and shown in the accompanying drawings be interpreted as illustrative and not in a limiting sense. Thus, the scope of the invention should be determined by the appended claims and their legal equivalence.

What is claimed is:

1. A folding playpen, comprising:

a frame assembly in an extended configuration comprising:
a plurality of parallel uprights arranged in a rectilinear configuration;
a plurality of upper rails pivotally affixed to and extending between top portions of adjacent ones of said uprights; and

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a co-planar grid extending between bottom portions of said uprights, said co-planar grid comprising

- a central support block substantially positioned at a center of said rectilinear configuration of said uprights, said central support block including a leg extending downwardly therefrom to bear upon a surface on which said frame assembly is placed, and
- a plurality of cross braces each extending from a respective one of said uprights to said central support block, each said cross brace being pivotally attached to said central support block and to said respective one of said uprights,

wherein said frame assembly is selectively collapsible from said extended configuration to a storage configuration by vertically translating said central support block from a lower position proximate to said bottom portions of said uprights to an upper position proximate to said top portions of said uprights;

- a flexible covering extending about a periphery of said frame assembly and selectively removable therefrom, said flexible covering defining an interior of said playpen and an open top of said interior of said playpen;
- a pad selectively removably supported by said co-planar grid and defining a closed bottom of said interior of said playpen; and
- a central divider selectively extendable in a vertical orientation within said interior of said playpen between a pair of opposing sides of said flexible covering and substantially from proximate to said open top to proximate to said closed bottom of said interior of said playpen so as to divide said interior of said playpen into at least a pair of interior portions located adjacent to one another but at opposite sides of said central divider, each interior portion having a corresponding portion of said open top defined by said flexible covering and a corresponding portion of said closed bottom defined by said pad supported by said co-planar grid,

wherein said opposing sides of said flexible covering each includes a first tab affixed thereto and extending substantially from proximate to said open top to proximate to said closed bottom of said interior of said playpen, each said first tab including fastener portions affixed thereto; and wherein said central divider is selectively removable from said playpen interior, said central divider having second tabs affixed to and extending from a top to a bottom of opposite ends thereof and including fastener portions on each of said second tabs being engaged with said fastener portions on each of said first tabs affixed to said opposing sides of said flexible covering.

2. The folding playpen according to claim 1 wherein said frame assembly further comprises a plurality of corner supports each received at said bottom portion of a respective one of said uprights wherein each of said cross braces is pivotally affixed to a respective one of said corner supports.

3. The folding playpen according to claim 1 wherein said co-planar grid further comprises a plurality of intermediate braces, each said intermediate brace extending between adjacent ones of said cross braces intermediate between said central support block and a respective one of said uprights.

4. The folding playpen according to claim 3 wherein each said intermediate brace extending between respective adjacent ones of said cross braces is pivotally attached to said respective adjacent ones of said cross braces, and further wherein each said intermediate brace includes a central hinge such that each said intermediate brace can be selectively folded upon itself.

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5. The folding playpen according to claim 1 wherein each said intermediate brace has opposite ends pivotally attached to brace fittings at respective ones of said cross braces, said brace fittings being freely translatable along a length of said cross braces.

6. The folding playpen according to claim 1 wherein said co-planar grid further comprises between each of adjacent ones of said cross braces, a secondary support block having a leg extending downwardly therefrom to bear upon the surface on which said frame assembly is placed, and a pair of intermediate support braces, a first of said intermediate support braces being pivotally attached to a first of said adjacent cross braces and said secondary support block and a second of said intermediate support braces being pivotally attached to a second of said adjacent cross braces and said secondary support block.

7. The folding playpen according to claim 6 wherein each of said first and second of said intermediate support braces at an end opposite from said secondary support block is pivotally attached to a brace fitting at a respective one of said first and second of said adjacent cross braces, said brace fittings being freely translatable along a length of said cross braces.

8. The folding playpen according to claim 1 wherein said central divider comprises a first panel affixed to a first interior side of said flexible covering and a second panel affixed to an opposite second interior side of said flexible covering, said first and said second panels being selectively attachable one to the other for dividing said interior of said playpen into at least said pair of interior portions.

9. A folding playpen comprising:

- a frame assembly in an extended configuration comprising:
 - a plurality of parallel uprights arranged in a rectilinear configuration;

- a plurality of corner supports each affixed to a bottom portion of a respective one of said uprights;

- a plurality of upper rails pivotally affixed to and extending between top portions of adjacent ones of said uprights, each said upper rail including a central hinge such that each said upper rail can be selectively folded upon itself;

- a co-planar grid extending between bottom portions of said uprights, said co-planar grid comprising

- a central support block having a leg extending downwardly therefrom to bear upon a surface on which said frame assembly is placed, said central support block substantially positioned at a center of said rectilinear configuration of said uprights, and

- a plurality of cross braces each extending from a respective one of said corner supports to said central support block, each said cross brace being pivotally attached to said central support block and to said respective one of said corner supports,

wherein said frame assembly is selectively collapsible from said extended configuration to a storage configuration by vertically translating said central support block from a lower position proximate to said bottom portions of said uprights to an upper position proximate to said top portions of said uprights;

- a flexible covering extending about a periphery of said frame assembly and selectively removable therefrom, said flexible covering defining an interior of said playpen and an open top of said interior of said playpen;

- a pad selectively removably supported by said co-planar grid and defining a closed bottom of said interior of said playpen; and

- a central divider selectively extendable in a vertical orientation within said interior of said playpen between a pair

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of opposing sides of said flexible covering and substantially from proximate to said open top to proximate to said closed bottom of said interior of said playpen so as to separate said interior of said playpen into at least a pair of interior portions located adjacent to one another but at opposite sides of said central divider, each interior portion having a corresponding portion of said open top defined by said flexible covering and a corresponding portion of said closed bottom defined by said pad supported by said co-planar grid, wherein said opposing sides of said flexible covering each includes a first tab affixed thereto and extending substantially from proximate to said open top to proximate to said closed bottom of said interior of said playpen, each said first tab including fastener portions affixed thereto; and wherein said central divider is selectively removable from said playpen interior, said central divider having second tabs affixed to and extending from a top to a bottom of opposite ends thereof and including fastener portions on each of said second tabs being engaged with said fastener portions on each of said first tabs affixed to said opposing sides of said flexible covering.

10. The folding playpen according to claim 9 wherein said co-planar grid further comprises a plurality of intermediate braces, each said intermediate brace extending between adjacent ones of said cross braces intermediate between said central support block and a respective one of said uprights.

11. The folding playpen according to claim 9 wherein each said intermediate brace extending between respective adjacent ones of said cross braces is pivotally attached to said respective adjacent ones of said cross braces, and further wherein each said intermediate brace includes a central hinge such that each said intermediate brace can be selectively folded upon itself.

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12. The folding playpen according to claim 9 wherein each said intermediate brace has opposite ends pivotally attached to brace fittings at respective ones of said cross braces, said brace fittings being freely translatable along a length of said cross braces.

13. The folding playpen according to claim 9 wherein said co-planar grid further comprises between each of adjacent ones of said cross braces, a secondary support block having a leg extending downwardly therefrom to bear upon the surface on which said frame assembly is placed, and a pair of intermediate support braces, a first of said intermediate support braces being pivotally attached to a first of said adjacent cross braces and said secondary support block and a second of said intermediate support braces being pivotally attached to a second of said adjacent cross braces and said secondary support block.

14. The folding playpen according to claim 13 wherein each of said first and second of said intermediate support braces at an end opposite from said secondary support block is pivotally attached to a brace fitting at a respective one of said first and second of said adjacent cross braces, said brace fittings being freely translatable along a length of said cross braces.

15. The folding playpen according to claim 9 wherein said central divider comprises a first panel affixed to a first interior side of said flexible covering and a second panel affixed to an opposite second interior side of said flexible covering, said first and said second panels being selectively attachable one to the other for dividing said interior of said playpen into at least said pair of interior portions.

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